ARTICLE 07
NIN COUPLING VALUES IN n=2
AND OXYGEN ELECTRONIC DENSITY

Javier Silvestre (eeatom.blogspot com)

ABSTRACT

P34 NIN III: ns electron as origin of lobes in same n by curves coupling [6] is used to obtain z, $C_{POTI-AL}$ and C_{PEP} in n=2. These values are used in later studies and are applied here to estimate maximum Oxygen electron density with simple method. Estimate must corroborate Fluorine example that is in agreement with references [6].

By this method, Probability (P_i) calculations are directed to delimited r_i (Electronic extremes-nucleus radial distance) differentials rather than divisions (d). Thanks to this change, P_i curves of different electrons can be added or calculation centred on concrete r_i can be made.

KEYWORDS

NIN coupling, Electron Probability, Origin Electronic System (OES), Born Electronic System (BES), Victoria Equation.

INTRODUCTION

This is 7th article of 24 dedicated to atomic model based on Victoria equation (Articles index is at end). A extern electronic extreme (EE_A) is indicated with a suffix (r_A, H_A or c_A), B intern with b suffix (r_B, h_B or c_B) and i suffix is used to both electronic extremes (EE_i). All abbreviations are compiled, in conjunction with those included in [6], at article end.

Electron with two EE has been introduced by Victoria Equation [1] and has been developed its geometry and probability [2-6] until achieving geometric and probabilistic coupling according to P34 NIN III [6]. This coupling between electron lobes (or Electronic Systems) by NIN rules allows extern electrons to be positioned by ns origin and provides approximate maximum electron density in n as P_i maximum contributed by the outermost Electronic System in n.

If in [6] maximum P_i is approximated by visual method from Pi vs. ri curve or from data with which figures have been made, curves overlap by P34 NIN III and maximum electron density are now studied in more detail using delimited r_i differentials. Initially, this study is centred on Oxygen lobes in n=2 to be later amplified to rest of atoms and lobes.

z, C_{PEP} and $C_{POTI-AL}$ (P32 C_{POTI} angular limit [5]) are calculated according [6] and summarized in P34 NIN III.

Born z by z coupling

Born Electronic System z (BES z or z_B) is provided by "P41 Electronic Charge (z) Coupling" [6] (1). Where BES is non-origin lobe and origin lobe is only ns electron external lobe. OES z or z_O is Origin Electronic System z.

$$(1)\ z_B = z_O\left(\frac{(E_o)_B}{(E_o)_O}\right.$$

(1) relates to ns origin electronic system (OES) because is the first in n quantum number and its z is known (P14 Effective nuclear charge in ns electrons [1]) and on which the rest are grouped. Anyway, all formulas that indicate O (Origin) and B (Born) can be transformed by considering born lobes (X and Y) that are located on the same n (2)

$$(2)\ z(Y) = z(X)\ \frac{(E_o)_Y}{(E_o)_X}$$

P14 Effective nuclear charge in ns electrons, which subtracts one charge for each extern electronic system as loses energy, is only a good approximation when z and energy relations are in concordance (3). Where z_B^* is z_B, but applying P14 to system not OES.

$$(3)\ \frac{z_O}{z_B^*} \approx \frac{IE_O}{IE_B}$$

P14 is correct with ns external lobe and a good estimate when is applied on ns^2 external lobe. Applying P14, ns^2 has one unit less charge that ns since ns^2 is next in energy after ns (**Table 1**).

Table 1 - z values for ns and ns^2 systems in n=2 applying P14

Symbol	Li	Be	B	C	N	O	F	Ne	Na	Mg	Al
ns	1	2	3	4	5	6	7	8	9	10	11
ns^2	---	1	2	3	4	5	6	7	8	9	10

Considering (3) and accepting P14 for ns^2, Ionization Energy (IE) (experimental data in [7]) and Charge (z) ratios between ns and ns^2 electronic system are represented in **Figures 1 and 2** for n=2 and n=3 respectively. In both n quantum numbers, there is good overlap between two relationships. This fact implies that applying P14 to estimate ns^2 external lobe charge is a good approximation and can be corroborated with **Table 2** where z has been obtained by P41 (1). However, if this is done on 2p lobe where an additional unit of charge must be subtracted according to P14, **Figure 3** is obtained with a bad overlap between two ratios which is checked in Table 2. Charge correct values are in Table 2 for all electronic systems (lobes) located on n=2 of atoms with 2s electron having z = [1-8].

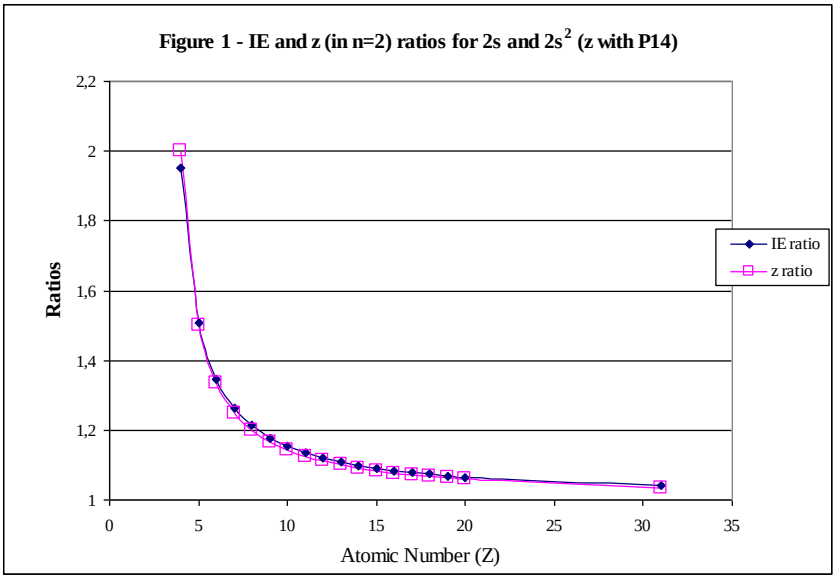


Figure 1 - IE and z (in n=2) ratios for 2s and 2s² (z with P14)
Ratios
2,2
2
1,8
1,6
1,4
1,2
1
0
5
10
15
20
25
30
35
Atomic Number (Z)
IE ratio
z ratio

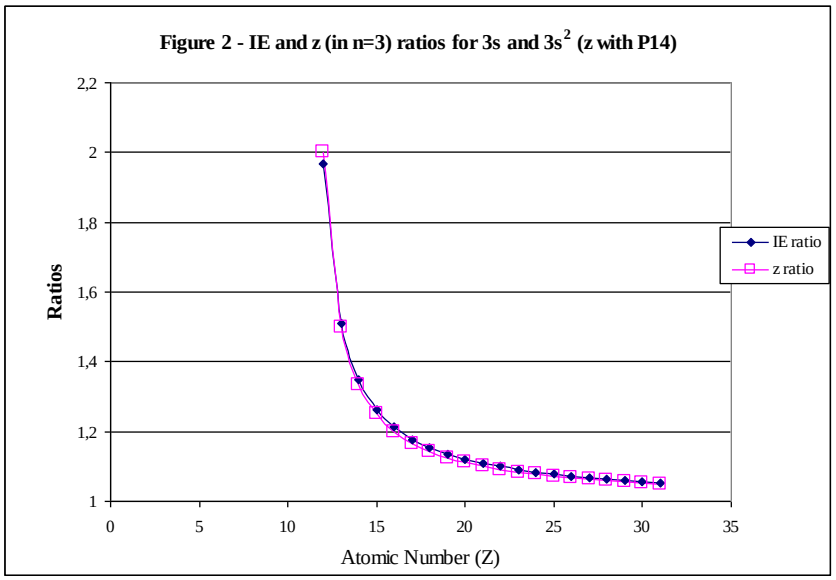


Figure 2 - IE and z (in n=3) ratios for 3s and 3s² (z with P14)
Ratios
2,2
2
1,8
1,6
1,4
1,2
1
0
5
10
15
20
25
30
35
Atomic Number (Z)
IE ratio
z ratio

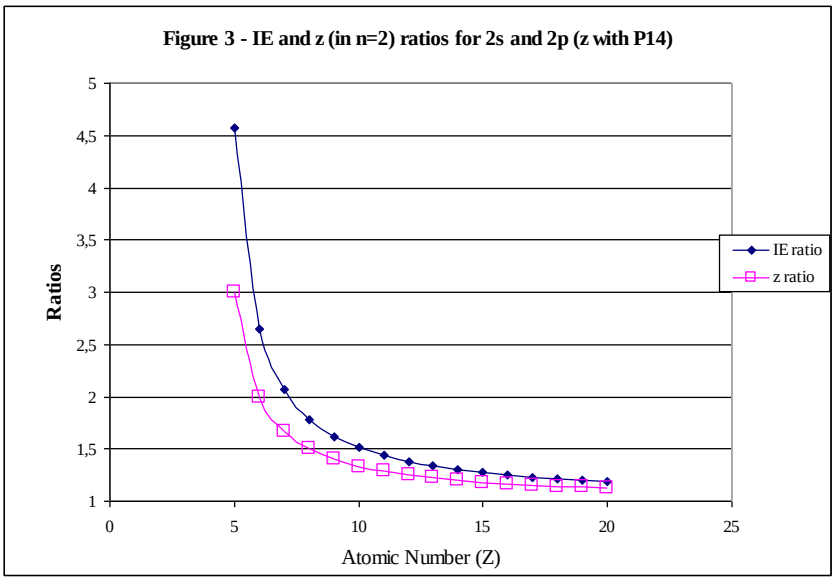


Figure 3 - IE and z (in n=2) ratios for 2s and 2p (z with P14)
Ratios
5
4,5
4
3,5
3
2,5
2
1,5
1
0
5
10
15
20
25
Atomic Number (Z)
IE ratio
z ratio

Table 2 – nuclear charge (z) value for Electronic Systems in n=2								
S	**z 2s**	**z $2s^2$**	**z 2p**	**z $2p^2$**	**z $2p^3$**	**z $2p^4$**	**z $2p^5$**	**z $2p^6$**
Li	1							
Be	2	1,023845						
B	3	1,989542	0,655687					
C	4	2,970084	1,512369	0,698383				
N	5	3,957166	2,423395	1,511963	0,74237			
O	6	4,947863	3,362907	2,386446	1,52569	0,59158		
F	7	5,940713	4,318575	3,295186	2,370342	1,321885	0,658577	
Ne	8	6,93513	5,284351	4,224128	3,251903	2,122095	1,370589	0,721533

$C_{POTI-AL}$ Coupling

Probabilistic Orbital Tide Coefficient (C_{POTI}**)** is introduced in P30 Third Feliz Solution [5]. C_{POTI} can reach up to C_{POTI} Maximum Geometric Angular Limit or C_{POTI} Angular Limit ($C_{POTI-AL}$) when nucleus-orbit-angle (α_{NOA}) is 180 degrees and can not be overcome (P32) except by $C_{POTI-AL-d\rightarrow\infty}$ hypothesis [5]). $C_{POTI-AL}$ by division with C_{POTI} minimum [5] is employed (4):

$$(4)\ C_{POTI\,Minimum} = \frac{\sqrt{2m_e fz}}{\hbar} r_i^{1/2} C_{MON}$$

C_{POTI} minimum is located in B intern electronic extreme by division (d) inclusion that provide C_{MON} and r_i values. 2s Nitrogen in its outermost lobe (n=2) has been taken by way of example. Division differences of 1 and 0.05 are chosen to observer consequent difference in minimum C_{POTI} obtained in (4) ($C_{POTI-AL}$). P14 can be used because 2s Nitrogen is origin lobe and therefore z=7-2=5 (Table 2). MON=10 according to P37.C. [6]. Search for C_{POTI} minimum can be performed considering this information and experimental IE [7]. Data are summarized in **Table 3**.

Table 3 - 2s Nitrogen lobe in n=2: $C_{POTI-AL}$ obtained using different division differentials		
d differentials	**d with H→0**	**$C_{POTI-AL}$**
1	20	3,6156985
0,05	19,55	3,6156386

Difference between d with H→0 is appreciable (20 and 19,55), although implies an effect on limited $C_{POTI-AL}$ (difference≈$6*10^{-5}$). This difference in $C_{POTI-AL}$ estimation is

even lower if d is higher since d increase implies smaller magnitude differences between divisions.

$C_{POTI-AL}$ for lobes in n=2 from Li to Ne are in Table 4. 2s in n=2 (OES) is obtained by method of $C_{POTI-AL}$ by division with C_{POTI} minimum and rest of Electronic Systems in n=2 (BES) is approximated with (5). (5) is given by P43 C_{POTI} coupling [6].

$$(5)\ C_{POTI\text{-}B} = C_{POTI\text{-}O}\sqrt{\frac{(E_o)_B}{(E_o)_O}}$$

Table 4 – $C_{POTI-AL}$ for Electronic Systems in n=2

	C_{POTI}			
S	**2s**	**$2s^2$**	**2p**	**$2p^2$**
Li	3,120030815			
Be	3,359105728	2,403398153		
B	3,478217809	2,832516633	1,626856285	
C	3,560848848	3,068362468	2,189478264	1,487884432
N	3,615638538	3,216562445	2,517271328	1,988249084
O	3,654576548	3,318709246	2,736010032	2,304813508
F	3,683620441	3,393507828	2,893245045	2,526847767
Ne	3,706032043	3,450601332	3,011984264	2,692571622
S	**$2p^3$**	**$2p^4$**	**$2p^5$**	**$2p^6$**
N	1,393189102			
O	1,842764379	1,147537460		
F	2,143550200	1,600750723	1,129874022	
Ne	2,361971852	1,909133042	1,533973097	1,112989544

Table 5 – $C_{POTI-AL}$ division for 2s OES (n=2)

	Li	**Be**	**B**	**C**	**N**	**O**	**F**	**Ne**
d	38,50	22,32	19,07	19,34	19,53	19,67	19,78	19,86
MON	25	12,5	10	10	10	10	10	10

Divisions, with accuracy = 0.01, that hold OES $C_{POTI-AL}$ are in **Table 5**. MON (P37 [6]) are also included in this Table 6. If MON is equal, divisions for $C_{POTI-AL}$ are similar and with a slight increasing trend with Atomic number. This MON influence in division that

has $C_{POTI-AL}$ evidences MON importance in morphology of geometric and probabilistic curves and therefore in $C_{POTI-AL}$.

MON Coupling

OES MON is supplied by "P37 OES MON" and BES MON is provided by "P39 MON Coupling" [6] (6). MON for lobes in n=2 from Li to Ne are in **Table 6**.

$$(6)\ MON_B = MON_O \frac{(E_o)_O}{(E_o)_B}$$

Table 6 – MON for Electronic Systems in n=2

S	2s	$2s^2$	2p	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$
Li	25							
Be	12,5	24,41776						
B	10	15,07885	45,75357					
C	10	13,46763	26,44857	57,27513				
N	10	12,6353	20,63221	33,06959	67,3519			
O	10	12,12645	17,84171	25,14199	39,32646	101,4234		
F	10	11,7831	16,20905	21,24311	29,53161	52,95468	106,2898	
Ne	10	11,53547	15,13904	18,93882	24,60098	37,69859	58,36905	110,875

C_{PEP} Coupling

BES C_{PEP} is given by (7) according to "P42 C_{PEP} as adapted Probability between a electrons pair". 2s OES C_{PEP} is taken equal to 1 because BES are born lobes whose Probability (Pi) are compared to OES. C_{PEP} is in **Table 7** for lobes in n=2 from Li to Ne.

$$(7)\ C_{PEP(B\,to\,O)} = \sqrt{\frac{(E_o)_O}{(E_o)_B}} \quad \text{For } P_{B\ to\ O}\ \ (P_{BORN\ TO\ ORIGIN})$$

Table 7 – C_{PEP} for Electronic Systems in n=2

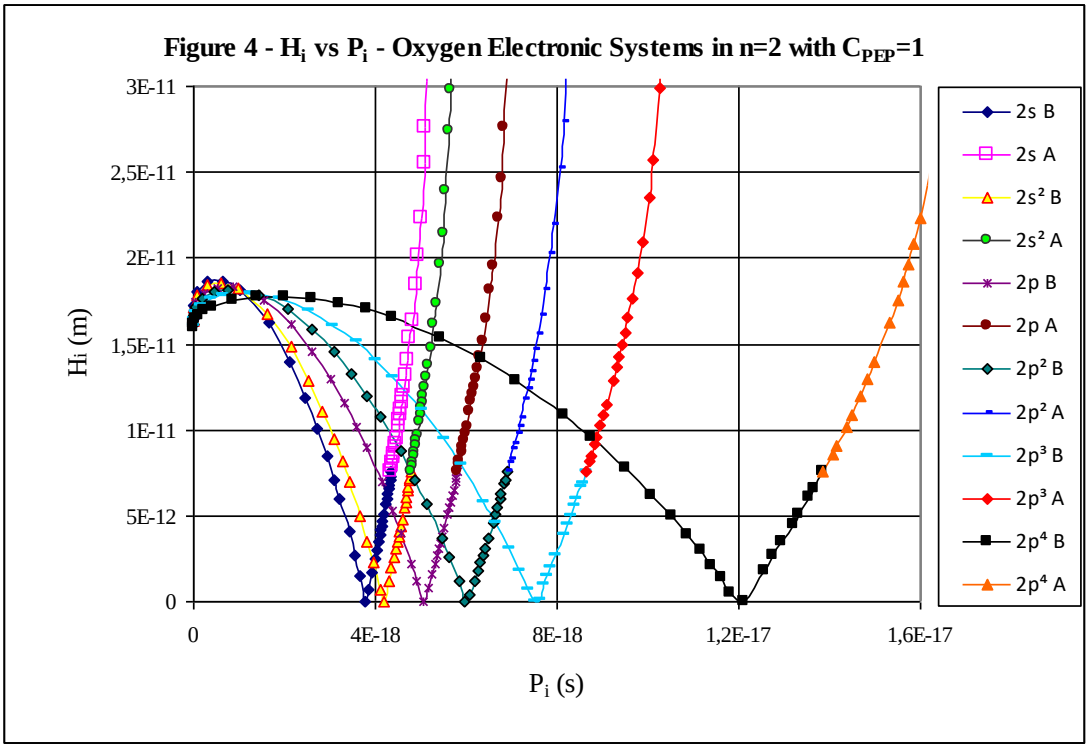
S	2s	$2s^2$	2p	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$
Li	1							
Be	1	1,397648						
B	1	1,22796	2,139008					
C	1	1,160501	1,626302	2,393222				

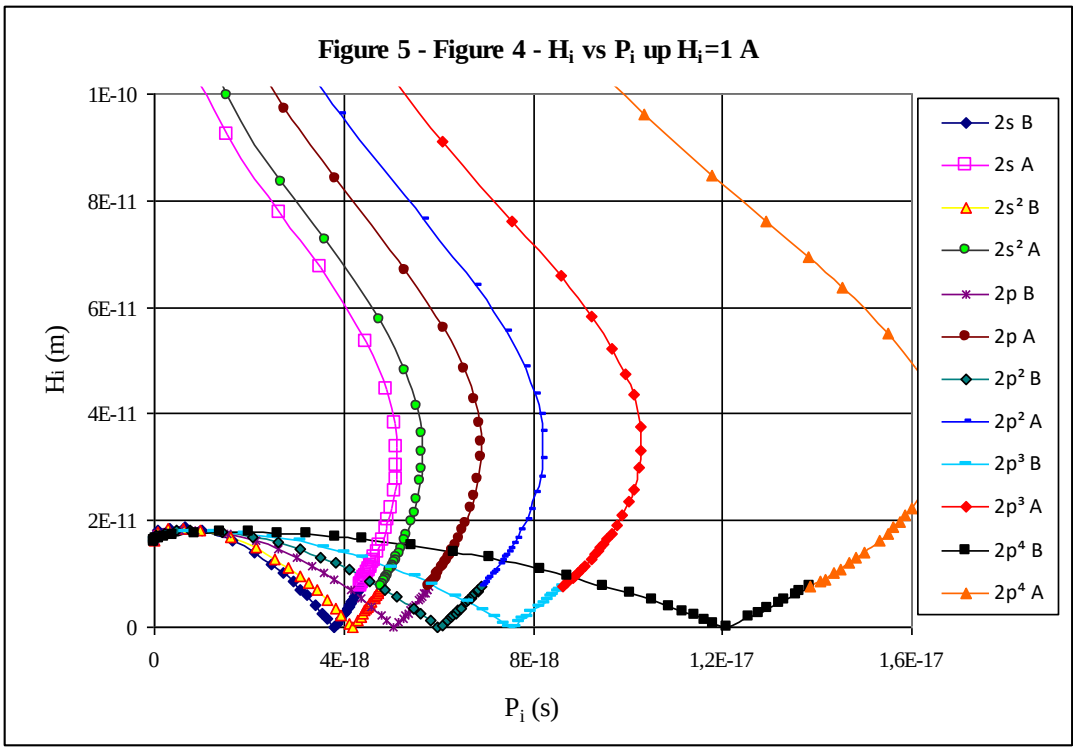
N	1	1,124069	1,436392	1,818505	2,595224			
O	1	1,101201	1,335729	1,585623	1,98309	3,184704		
F	1	1,0855	1,273148	1,457502	1,718476	2,301188	3,260212	
Ne	1	1,074033	1,230408	1,376184	1,56847	1,941612	2,415969	3,32979

H_i vs P_i representation with C_{PEP}=1

H_i is circular orbital height. P_i and EE orbital circumference (c_i) are closely related through Compaction Factor (CF) [3-6]. Thus, H_i vs P_i is an approximation to H_i vs c_i and, consequently, provides an orbital geometry idea in two dimensions (height and width). Turn with radius=c_i allows to reach 3 dimensions. H_i vs P_i and not P_i vs H_i is for this reason of indirect geometric representation.

In **Figure 4 and 5** are A and B electronic extremes that correspond to electron in Oxygen that is in each one of six electronic systems that Oxygen have in n=2. In all lobes C_{PEP}=1, i.e. no C_{PEP} coupling, to observe initial positions before being referred to OES. Consequently, P34 NIN III is only with Geometric NIN Coupling (GNC) [6]. Figure 5 differs from 4 in that Y axis is enlarged from 0.3 to 1 A to achieve a broader view of the curve shape.





From both figures can be highlighted:

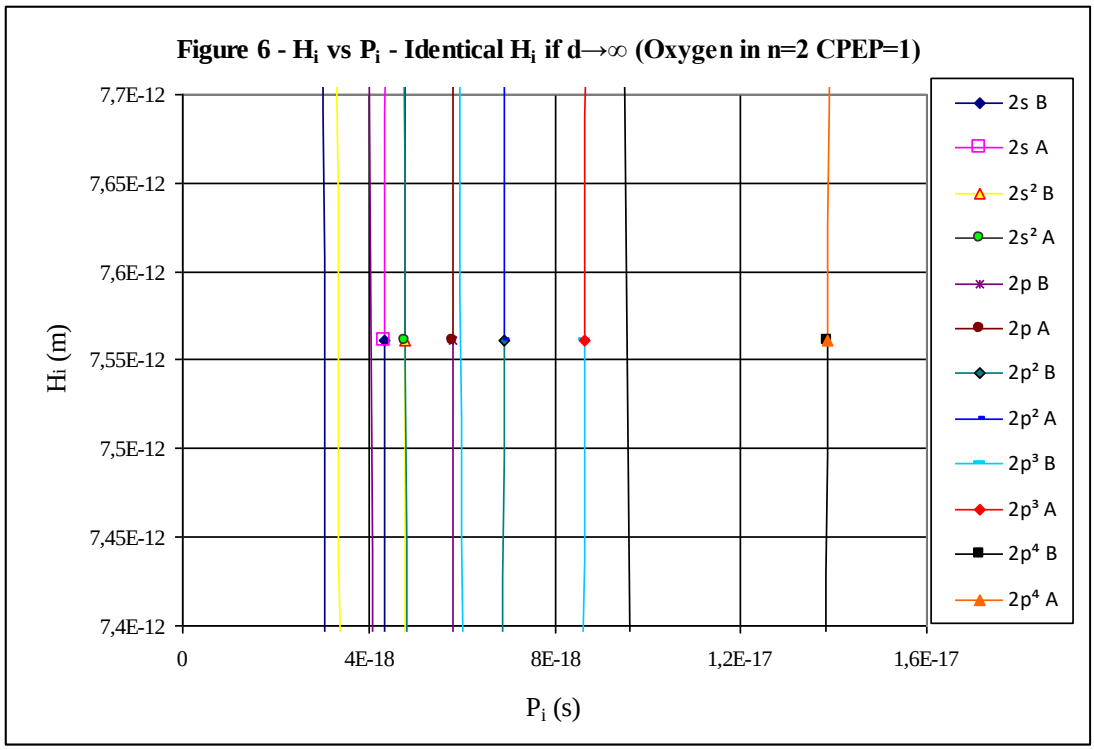
1) Electronic systems with higher IE present curves with P_i lower. Even considering that BES z are not integer (P41 [6]), order in P_i is deductible for their energies. Thus, curves located from lowest to highest probability are:

$$2s < 2s^2 < 2p < 2p^2 < 2p^3 < 2p^4$$

2) Curves shape is very similar although curves width differs. Role for Probabilistic NIN Coupling (PNC) is assumed by C_{PEP} (P34 NIN III [6])

3) In addition to similar curves shape, there are two geometric points that allow to imagine PNC:

> 3.1) Curves are linked at low d_B (where B subscript refers to B intern electronic extreme) See in Figure 4.
> 3.2) Division infinite points in H_i vs P_i representation are aligned with identical H_i fulfilling division infinite coupling between lobes (electronic systems) located in same n. In **Figure 6**, this H_i can be located above $7{,}55 \cdot 10^{-12}$ m and can be specified with numerical treatment around $7{,}561 \cdot 10^{-12}$ m.



P_i vs. r_i representation with C_{PEP}=1

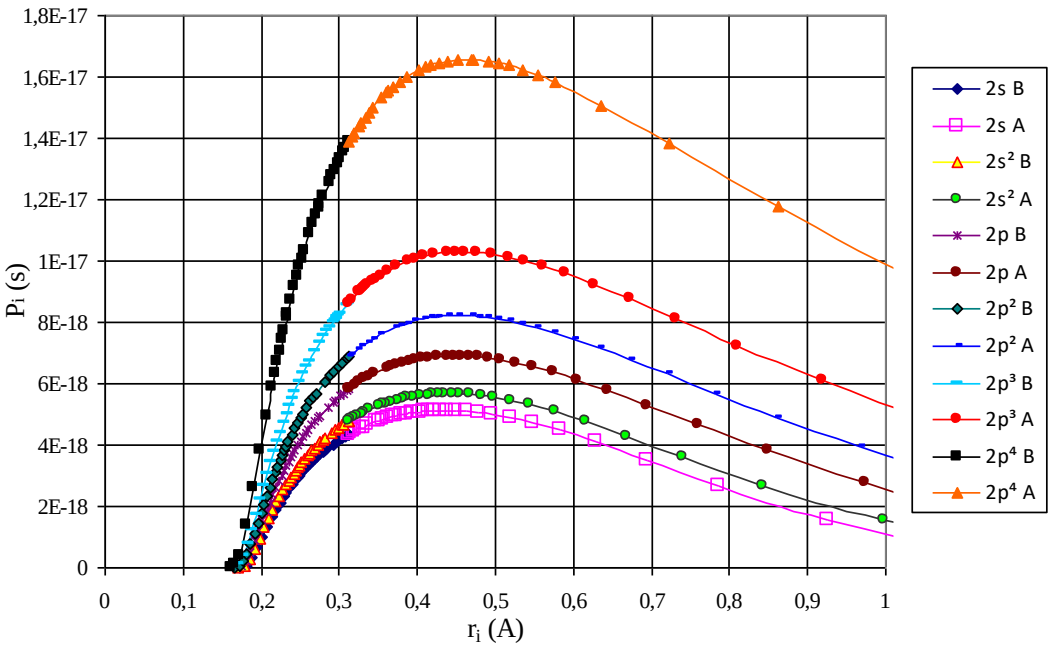
Unlike the previous point, P_i is in Y axis since is r_i function. Also, is classic location in bibliography. Lobes are adjusted with GNC (**Figure 7** with C_{PEP}=1) as has been done in previous point with H_i vs. P_i. PNC view is represented later. P_i maximum varies slightly from 2s OES to the outermost $2p^4$ BES which is located at ≈ 46 pm and agrees with 46 pm [8] and 44 pm [9]. Fluorine [6] and Oxygen have same 2s OES MON=10 (P37 [6]) and their P_i maxima are correlated with those contributed by references. Outermost BES P_i is taken as P_i maximum for n quantum number where this outermost BES is located in a first approximation because:

1) $2p^4$ Outermost BES has a much higher probability than internal lobes as 2s OES. Specifically, in Oxygen case is on order of 3 times higher provided is assumed that global probability is referred to C_{PEP}=1. This model with GNC is compared in the following article with probability calculation when PNC has been produced.

2) Usually, there are more external electrons than internal electrons. In this case, there are 4 in 2p and 2 in 2s.

3) Curves and maxima are similar and therefore, differences between models are reduced.

Figure 7 - P_i vs r_i - Oxygen Electronic Systems in n=2 with C_{PEP}=1



Calculation method with r_i defined - Application to Probability

(8) subsequent use is indicated in [1]. (8) permits to know division associated with r_A and therefore r_A specific region can be studied.

$$(8)\ d = \frac{E_o\lambda + \frac{F\lambda}{2r_A}}{F + E_o r_A}$$

1) Lobe Individual P_i (C_{PEP}=1)

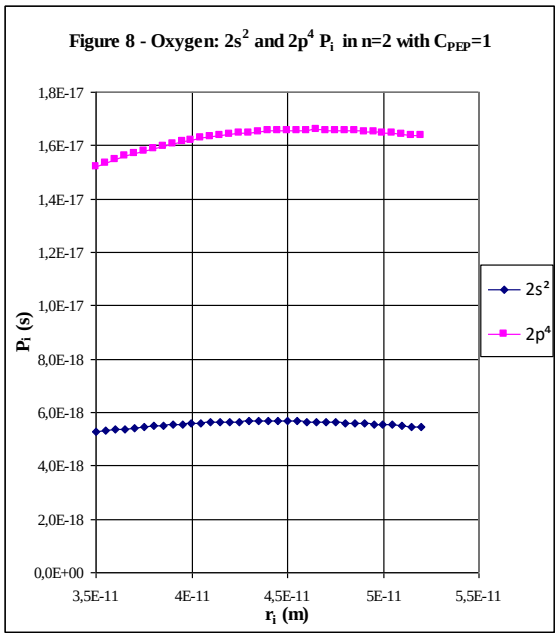
For n=2, $2s^2$ and $2p^4$ Probability is in **Figure 8**. Figure 8 is bounded between 35 and 52 pm with r_i=0,5 pm variations. Maxima of both lobes are very close. This fact can be corroborated by **Figure 9** and **10** and corresponding **Table 8 (Annex)** where maxima have been highlighted. P_i vs. r_i representations for $2s^2$ and $2p^4$ are in Figure 9 and 10 respectively.

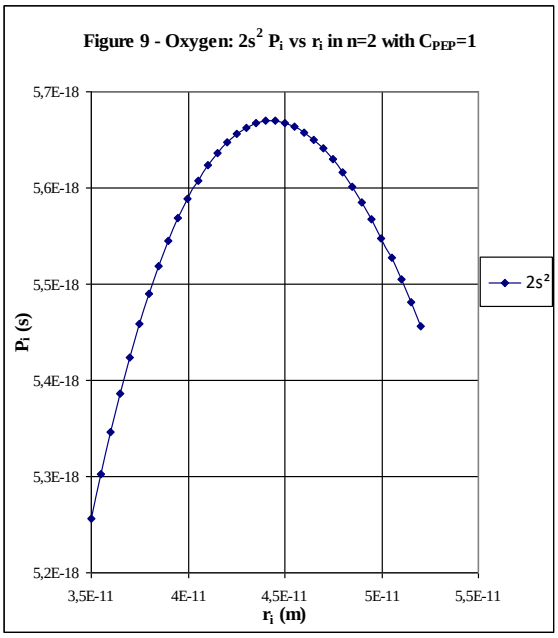
2) Lobes P_i Sum (C_{PEP}=1)

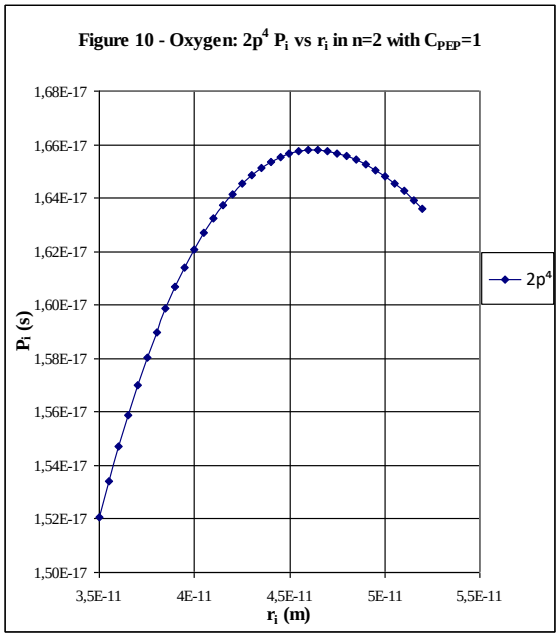
Following steps are in this model:

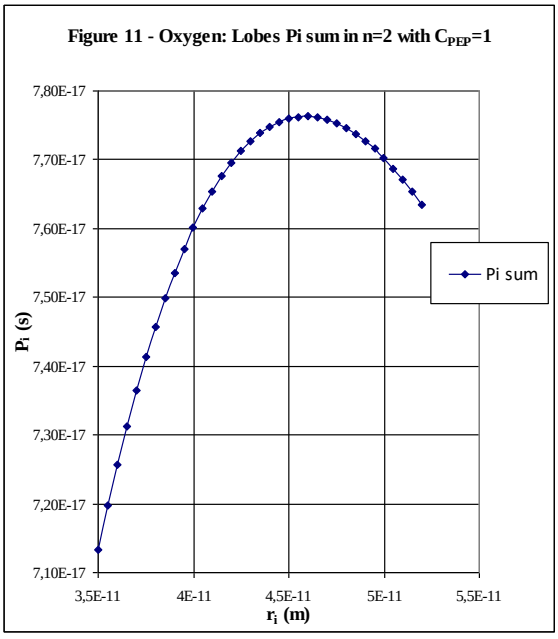
2.1) Lobes that exist in a concrete n.
2.2) P_i vs. r_i curves for each lobe. All curves with C_{PEP}=1
2.3) Multiply P_i by electrons number that have that lobe; i.e. consider its electronic configuration (Oxygen n=2 shell has 2 electrons with lobe $2s^2$ and 4 electrons with lobe $2p^4$).

2.4) Lobes P_i summation. In Oxygen n=2 shell case, lobes P_i summation is represented in **Figure 11**. Resulting curve is similar to individual ones and has no discontinuities. P_i maximum is located at ≈ 46 pm and is also in agreement with 46 pm [8] and 44 pm [9].







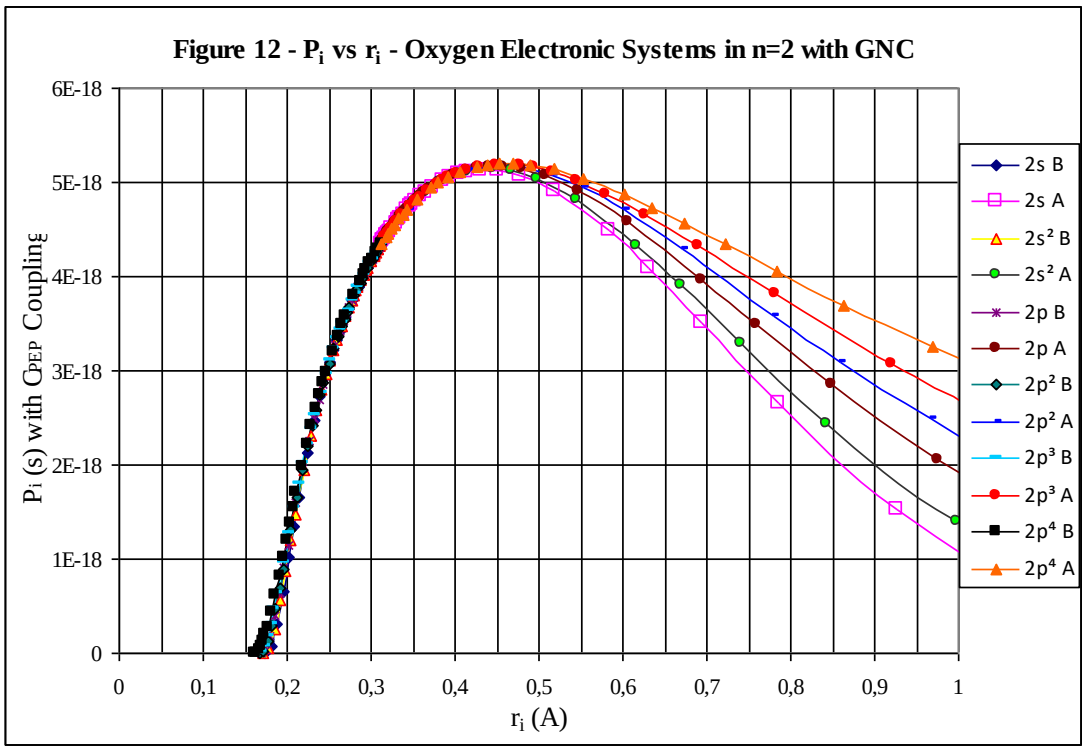


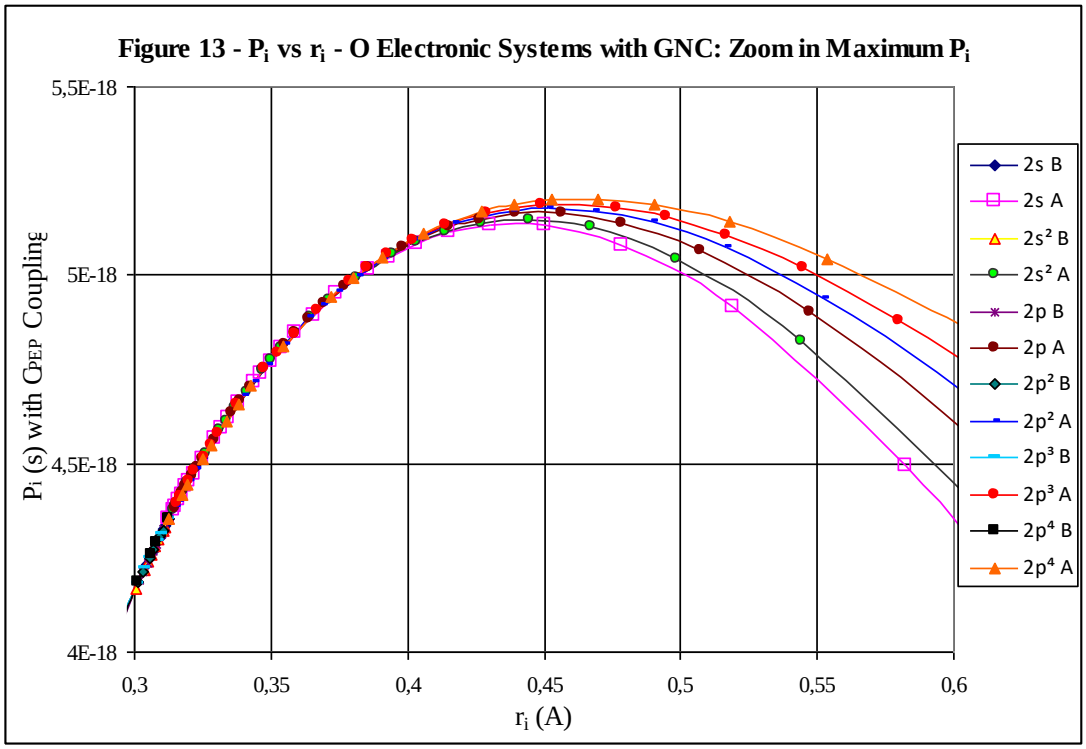
P_i vs. r_i curves can be constructed with lower r_i differentials to have a greater precision. Lobes P_i sum with C_{PEP} coupling (PNC) can be studied although resulting curve and P_i Maximum have little variation with what is seen at this point. Variations are somewhat greater when n quantum number increases, implying that MON decreases (P37 [6]) and P_i vs. r_i curves are diverted to higher r_i. These points are expanded in following article.

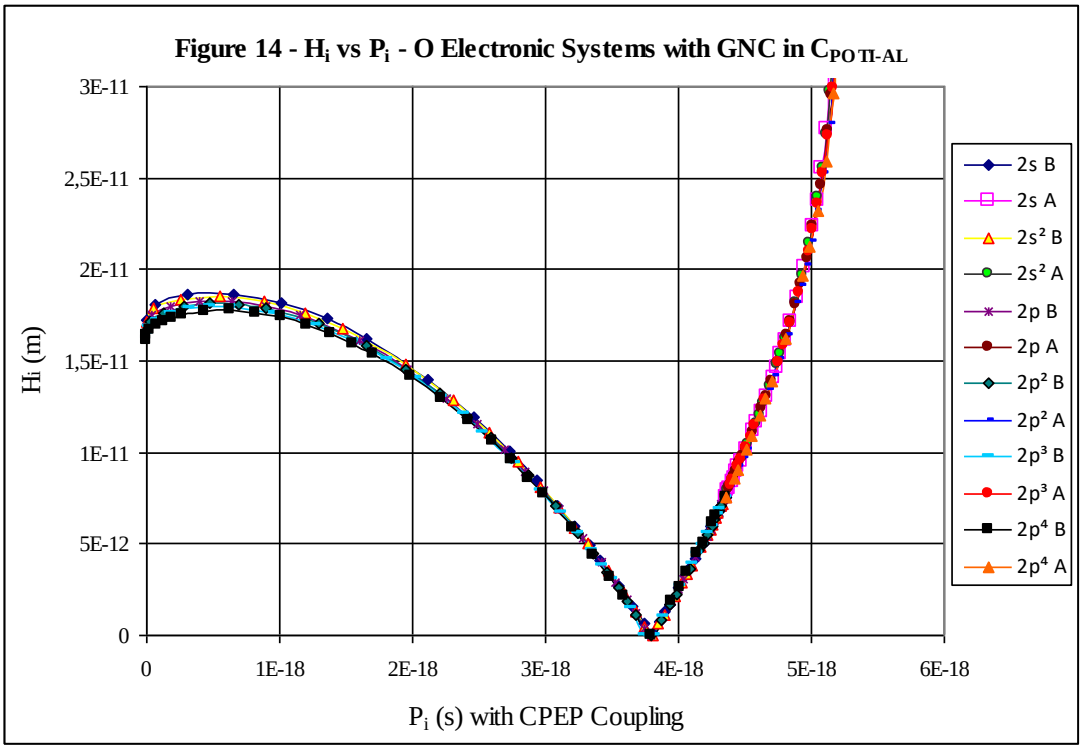
P_i representations with C_{PEP} Coupling (Probabilistic Nin Coupling or PNC)

Above curves are transformed into PNC by C_{PEP} coupling. Data for C_{PEP} Coupling in oxygen n=2 shell are in **Table 7**. P_i vs. r_i representation with PNC for its six electronic systems is in **Figure 12**. All electronic systems are overlapped in infinite division and in wide range of B intern electronic extreme. With respect to A extern electronic extreme, curves overlap is performed up to near P_i maxima zone, from where distancing between P_i curves begins to become more noticeable as lobes are more energetically distanced (**Figure 13**).

H_i vs. P_i representation is in **Figure 14**. $C_{POTI-AL}$ Coupling has been obtained from Table 4. Electronic extremes births junction is $H_i \approx 7{,}5$ pm as discussed previously. If instead of working with $C_{POTI-AL}$ and its $\alpha_{NOA}=180$ degrees, lower OES $C_{POTI-GAL}$ is selected, PNC is maintained.







BIBLIOGRAPHY

[1] Javier Silvestre. Victoria Equation - The dark side of the electron. (Document sent to vixra.org)
[2] Javier Silvestre. Electronic extremes: orbital and spin (introduction). (Document sent to vixra.org)

[3] Javier Silvestre. Relations between electronic extremes: Rotation time as probability and First Feliz Solution. (Document sent to vixra.org)
[4] Javier Silvestre. Feliz II the prudent: Probability radial closure with high order variable C_F. (Document sent to vixra.org)
[5] Javier Silvestre. Feliz III The King Major: Orbital filled keeping Probability electronic distribution. (Document sent to vixra.org)
[6] Javier Silvestre. Feliz IV Planet Coupling: Probability curves NIN coupling from origin electron. (Document sent to vixra.org)
[7] Kramida, A., Ralchenko, Yu., Reader, J., and NIST ASD Team (2014). NIST Atomic Spectra Database (ver. 5.2), [Online]. Available: http://physics.nist.gov/asd
[8] S. Fraga, J. Karwowski, K. M. S. Saxena, Handbook of Atomic Data, Elsevier, Amsterdam, 1979.
[9] Desclaux JP. Relativistic Dirac-Fock expectation values for atoms with Z = 1 to Z = 120. Atom Data Nucl Data Tables 1973;12: 311-406.

Abbreviations List

Suffix indicates electronic extreme considered and i suffix is used to both electronic extremes (EE_i). Following Table indicates abbreviations used in this theory and its use in article in question is marked with X. 7 is present article. Jump from "Article 09" to "Article 20" is consequence of second part inclusion.

Abbreviations Table						
Abbreviation	**6**	**7**	**8**	**9**	**20**	**Meaning**
α_{NOA}		X				Nucleus-Orbit-Angle
a_o						Bohr radius
AL						Angular Limit
BES	X	X	X	X		Born Electronic System
c_i	X	X	X	X		EE Orbital circumference
C_F	X		X	X		Wavelength compaction factor
C_{MON}	X	X				C_F without C_{POTI}
C_{PEP}	X	X	X	X		Probability electrons pair coefficient
C_{POTI}	X	X	X	X		Probabilistic Orbital Tide in Third Feliz Solution
$C_{POTI-AL}$		X	X	X		C_{POTI} Angular Limit
$C_{POTI-GAL}$			X			C_{POTI} Geometric Angular Limit
$C_{POTI-LAG}$			X			C_{POTI} Lobe always growing
d	X	X	X	X		Birth wavelength division or simply, division
EE	X	X	X	X		Electronic extreme
E_o	X	X	X	X		Initial, birth or output energy
E_i			X			EE energy
Ek_i						EE kinetic energy
EP_i						EE potential energy

ES						Equi-energetic state
f	X					Constant in Victoria Equation
F		X				Constant f multiplied by z
GAL						Geometric Angular Limit
GNC	X	X	X	X		Geometric NIN Coupling
h						Planck´s constant
ħ	X		X			Reduced Planck´s constant
h_i						Planck´s constant adapted to EE
H_i	X	X	X	X		EE Circular orbit height
IE	X	X	X	X		Ionization Energy
m_e			X			Electron mass
m_i						EE mass
J	X					C_F order in Second Feliz Solution (From x=1 to J)
K_P						Probability constant in Variable C_F
λ_{Birth} λ		X	X			Birth wavelength
λ_c						Electron classic wavelength
λ_i						EE wavelength
$\lambda_{i\text{-}Birth}$						EE wavelength when $d \to \infty$
M	X					MON (Modified Orbital Number)
MON	X	X	X	X		Modified Orbital Number
NIN	X	X	X	X		Negative in Negative (Electron in electron concept)
OAM						Orbital Angular Momentum
OES	X	X	X	X		Origin Electronic System
OPA			X			Orbital Planes Axis
P_i	X	X	X	X		EE Probability
P	X					PEP (Principal Electronic Part)
PEP	X					Principal Electronic Part
PNC	X	X	X	X		Probabilistic NIN Coupling
$P_{Y\ to\ X}$	X					P_y with respect to X lobe
r_i	X	X	X	X		Distance between nucleus and EE
v_i			X			EE velocity
z	X	X	X	X		Effective nuclear charge
Z		X	X			Atomic number

ARTICLES INDEX		
Part	**Number**	**Title**
Part I - Victoria Equation and Feliz Solutions	01	Victoria Equation - The dark side of the electron.
	02	Electronic extremes: orbital and spin (introduction)
	03	Relations between electronic extremes: Rotation time as probability and Feliz I.
	04	Feliz II the prudent: Probability radial closure with high order variable C_F
	05	Feliz III The King Major: Orbital filled keeping Probability electronic distribution.
	06	Feliz IV Planet Coupling: Probability curves NIN coupling from origin electron.
	07	NIN Coupling values in n=2 and Oxygen electronic density.
	08	Electron Probability with NIN coupling in n=2.
	09	Electron probability with NIN coupling in n>2 and necessary NIN relationships.
Part II – Excited electron: Tete Vic and LAN	10	Excited electrons by Torrebotana Central Line: Tete Vic Equation.
	11	Excited electrons: LAN plains for Tete Vic Equation.
	12	Relation of Riquelme de Gozy: LAN linearity with energy of excited states.
	13	Relation of Fly Piep de Garberí: LAN^{-1} and Ionization Energy.
	14	Relation of Silva de Peral & Alameda: LAN interatomicity with energetic relation.
	15	Relation of Silva de Peral & Alameda II: jump from n_ss to ns.
	16	SPA III: Mc Flui transform for Silpovgar III and Silpovgar IV.
	17	SPA IV: Silpovgar IV with Piepflui. Excess Relativistic: influence in LAN and SPA
	18	Feliz Theory of Eo vision - Relativistic II: influence in Riquelme de Gozy
	19	Pepliz LAN Empire I: $LAN_{n\to\infty}$ vs. LAN(P50)
	20	Pepliz LAN Empire II: $LAN_{n\to\infty}$ vs. LAN(P50)
Part III - NIN: C_{PEP} & C_{POTI}	21	Electron Probability: PUB C_{PEP} I (Probability Union Between C_{PEP}) - Necessary NIN relationships
	22	Electron Probability: PUB C_{PEP} II in "Flui BAR" (Flui (BES A (Global Advance) Region)
	23	Orbital capacity by advancement of numbers - Electron Probability: PUB C_{PEP} III: "Flui BAR" II and $C_{PEP\text{-}i}$
	24	Electron Probability: 1s electron birth: The last diligence to Poti Rock & Snow Hill Victoria
24 hours of new day		

Annex

Table 8 - Oxygen. EE_A Probability (P_A) – Maximum P_A zone for $2s^2$ and $2p^4$ with C_{PEP}=1		
ri	ci-probabilidad	
	2s2	2p4
3,5E-11	5,2558E-18	1,5206E-17
3,55E-11	5,3026E-18	1,5342E-17
3,6E-11	5,3462E-18	1,5470E-17
3,65E-11	5,3866E-18	1,5589E-17
3,7E-11	5,4241E-18	1,5700E-17
3,75E-11	5,4585E-18	1,5802E-17
3,8E-11	5,4902E-18	1,5898E-17
3,85E-11	5,5190E-18	1,5985E-17
3,9E-11	5,5450E-18	1,6066E-17
3,95E-11	5,5685E-18	1,6140E-17
4E-11	5,5893E-18	1,6207E-17
4,05E-11	5,6076E-18	1,6268E-17
4,1E-11	5,6234E-18	1,6323E-17
4,15E-11	5,6368E-18	1,6372E-17
4,2E-11	5,6478E-18	1,6415E-17
4,25E-11	5,6565E-18	1,6453E-17
4,3E-11	5,6630E-18	1,6485E-17
4,35E-11	5,6673E-18	1,6512E-17
4,4E-11	**5,6695E-18**	1,6535E-17
4,45E-11	**5,6696E-18**	1,6552E-17
4,5E-11	5,6677E-18	1,6565E-17
4,55E-11	5,6638E-18	1,6574E-17
4,6E-11	5,6579E-18	**1,6579E-17**
4,65E-11	5,6502E-18	**1,6579E-17**
4,7E-11	5,6407E-18	1,6576E-17
4,75E-11	5,6294E-18	1,6568E-17
4,8E-11	5,6164E-18	1,6558E-17
4,85E-11	5,6017E-18	1,6543E-17
4,9E-11	5,5853E-18	1,6526E-17
4,95E-11	5,5674E-18	1,6505E-17
5E-11	5,5480E-18	1,6481E-17
5,05E-11	5,5271E-18	1,6455E-17
5,1E-11	5,5048E-18	1,6425E-17
5,15E-11	5,4811E-18	1,6393E-17
5,2E-11	5,4560E-18	1,6359E-17